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whatsoever upon the nature of the brothers-in-law opposition, and conversely.

In conclusion, it is possible to devise ways of empirically testing whole systems of relations from a test of one *if* those relations are first made into systems. This, I suggest, is possible only if analysts specify their proposed relations in greater detail than in the example examined here. Vague statements are very difficult to falsify. That specific description is a worthwhile objective of scientific work can be seen from noting that “falsifiability” (Popper 1968) and level of precision are “positively correlated” (linearly, exponentially, asymptotically, etc.).

Polythematic Expansion: Remarks on Needham's Polythetic Classification¹

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In every philosophy there is a point at which the “conviction” of the philosopher steps upon the scene.

Nietzsche, *Beyond Good and Evil*

NEEDHAM AND WITTGENSTEIN

In “Polythetic Classification: Convergence and Consequences,” Needham (1975) has attempted to provide a conceptual structure that would allow one to move inferentially from discussions of one important phenomenon to discussions of other important phenomena. Essentially, Needham's soritical elaboration progresses from Wittgenstein's “family resemblances” to the numerical taxonomical idea of “polythetic taxa” to a discussion of “evolution” to Murdock's *Social Structure* (1949) and finally to a spirited plea that we abandon substantive paradigms for “formal properties which can be defined in purely formal terms, e.g., in the notation of symbolic logic without reference to any class of entities, however the classes may be composed, or to the characteristic empirical features of their members” (Needham 1975:365). I applaud Needham for explicitly bringing Wittgenstein's work to bear on anthropological perplexities of description and comparison. However, the reader is led to believe at many points that the works of Wittgenstein and Needham point in the same general direction. Fortunately, they do not. Wittgenstein illustrated that the idea that we can discover an ideal notation is an illusion; Needham's “formal properties” are references to ideal notation. Whereas the “wilderness of formes” sends Needham scurrying back to his intellectual tower of formal properties and terms, Wittgenstein works among the “wilderness of formes” to discover how language expressions acquire their *meanings* through *use* in our practical dealings with one another and the world.²

¹ This paper was presented at an anthropological colloquium at the University of Oregon in October 1976.

² Essentially, they have taken to heart the later Wittgensteinian philosophy on how the language of values and evaluation are learned in the context of *lebensformen* (forms of life). They are “displaying” that to understand Wittgenstein as providing solutions to intellectual problems one needs to understand the historical and cultural background of the intellectual problems among which Wittgenstein grew up. They are providing a kind of ethnography of academic and intellectual categories and puzzlements. Paradoxically, many of the symbolic modes of consciousness in the Western intellectual tradition

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The central question is whether the form of Needham's argument is to be judged a success. To me, his conceptual montage is a most interesting display—interesting because comparatively few in contemporary anthropology tread these methodological and epistemological areas. I contend, however, that one can discern a different “convergence in the history of ideas” than the one he sees by slipping on a set of inference-frames which converge on “polythematic expansion.” To show this, I shall attempt to unfold Needham's convergences and trace their interconnections.

FAMILY RESEMBLANCES AND POLYTHETIC TAXA

The idea of family resemblances embraces the fact of “a complex network of similarities overlapping and criss-crossing, sometimes overall similarities, sometimes similarities of detail” (Needham 1975:350). Needham's major assertion is that “family-resemblance” predicates had already been adduced in certain natural sciences under the term “polythetic classification”:³ “Taxa characterized by a set of characters of which each member has a majority are called *polythetic taxa*. . . . No single feature is essential for membership in a polythetically defined taxon nor is any feature sufficient for membership” (Mayr 1969:83, cited by Needham 1975:357).

Needham's discussion of “family resemblances” and his discussion of “polythetic classification” are first-class, separately, but his converging of them veils phenomenal differences. “Family resemblances” have to do with how we use our words and concepts; “polythetic classification” refers to our data charts. According to Wittgenstein (1958:7), when words in our ordinary language have *prima facie* analogous grammars we are inclined to try to interpret them analogously; i.e., we try to make the analogy hold throughout. Needham's lack of attention to this difference may be related to a failure to discern the relationship of explanatory patterns to significant observations.

are as “foreign” as the shapes of life that anthropologists usually address. For a discussion of the remarkable milieu in which Wittgenstein grew up, see Janik and Toulmin (1973).

³ Concerning the shortcomings of the “common-thread” view of definition, classification, and understanding, Cassirer (1960:20–21) has written in another context, “Goethe once defended himself against attempts to give abstract expression to the common idea running through the poetic picture of Faust. ‘If,’ he said, ‘I were to attempt to string upon the meager thread of a single all-comprehending idea so rich, many colored, and complex a life as I have brought to perception in Faust, the very act of doing so would of necessity become just such a thing of beauty.’ Nor does that most complex of intellectual life running through poetry and philosophy of German classical literature admit of being defined by one idea and one only. It is a mistake and quite misleading to attempt in all seriousness to find ‘that one incisive and elegant formula’ by which to give expression to one's own intimate experience. . . .”

According to Hanson (1958:59), "It is not that certain words are absolutely theory-loaded, whilst others are absolutely sense-datum words. Which are the data-words and which are the theory-words is a contextual question." Although the very idea of "polythetic classification" is itself theory-laden, the taxa are the data charts which lead to further conceptual elaboration, e.g., as to what the nature of the phenomena would have to be for the data charts to be as they are. Polythetic classification is actuarial data summary, not explanatory theory. If anything, it is a more refined kind of "butterfly collecting." Hanson (1971a:7) has said, "The ways in which theories, conceptual structures are meaningful with respect to the observation statements is qualitatively a different type of concern from that involved in discussions of how observational statements are meaningful with respect to things." The form of Needham's "language game" delimits the scope and boundaries of the sayable. His presentation of "polythetic classification" obscures how linguistic expressions acquire linguistic significance as a result of being *given a use* in human endeavor.

Further, Needham's prescription veils disparate forms of family resemblances. He is dealing with *intra*-family resemblances (for example, words such as "belief" in diverse contextual usages), not with *inter*-family ones. The "polythetic taxa" of species in the numerical taxonomy of living systems are (if anything) analogous to a kind of taxonomy of configurations of explanatory networks (explanatory themes). Different language games are different systems of communication.

Wittgenstein's students Toulmin and Hanson have gone beyond ordinary language to an examination of disparate patterns of understanding in the history and philosophy of world scientific inquiry. Hanson (1969:74) has said of Wittgenstein, "It was his *analysis* of complex concepts such as *seeing*, *seeing as* and *seeing that* which exposed the crude bipartite philosophy of sense datum versus interpretation as being the technical legislation it really is. By means of philosophy he destroyed the dogma of immaculate perception." Wittgenstein is a major inspiration behind the shift in intellectual allegiance from logical analysis to perceptual-conceptual history. A major concern of the later Wittgenstein was language as use structured through various enculturated "forms of life." Language games and forms of life are reflected in such terms as "methods of representation" (Watson 1938), "presuppositions" (Collingwood 1940), "epistemic correlation" (Northrop 1947), "seeing as a 'theory-laden' undertaking" (Hanson 1958), "ideals of natural order" (Toulmin 1961), and "paradigms" (Kuhn 1970). Basically, an evolutionary model of conceptual variation and selective retention is being provided. The overall effect has been to illustrate an evolving semantic-linguistic system within frameworks of populations of people and populations of propositional networks and their contexts of employment. The history and philosophy of scientific inquiry address themselves to the nature of the semantic manifold that human beings have elaborated in their understanding of the natural manifold. Their aim is the formation of meta-understandings: understandings about understandings. Social anthropology shares with them this focus on human understandings (Chaney 1975).

Inference patterns such as "methods of representation," "paradigms," etc., draw our attention to the form of the articulation of an empiric-phenomenic (X) factor and a heuristic-analytic (Y) factor: Z factors of underlying presuppositions, notions, arguments, etc., that have disparately and transiently articulated the X and Y factors for human comprehension. As I have pointed out before (Chaney 1976:749), a Z factor is analogous to the form of a sonata, the design of a building, and the plot of a novel; Z factors are shapes of what is conceived to be in need of understanding (see Holton 1973:11-68; Hanson 1971a; Bidney 1953, 1973; Cassirer 1944, 1946). Z factors, in a space-time frame, express what one might refer to as *poly-*

thematic expansion. The classical physics of big brass balls running down inclined planes is not the 20th-century conceptual world of particulate births and deaths at the quantum level. Skinner's ordered world is not that of Nietzsche's later Dionysus. I stress the dynamic idea of expansion in the sense of both (1) the human expansion on ideas of others and (2) the expansion in number of members of a community of understanding.

EVOLUTION AND MURDOCK'S SOCIAL STRUCTURE

A further move in Needham's language game is his discussion of evolution and Murdock's *Social Structure* (1949). Needham (p. 359) says that the presence or absence of evolutionary connections makes for a striking difference between the materials classified by the natural scientist and those classified by the social scientist:

It is not without good reason that social anthropologists today pay little if any attention to evolutionary connexions among social forms, to the extent, indeed, that it is hard to find a modern instance of such an approach. There is, though, one study of the kind, carried out on a scale comparable with that of zoology or bacteriology, in Murdock's *Social Structure* (1949). . . . Murdock's evolutionary scheme permits the establishment of such a proliferation of transitional connexions, many of which are reversible, as to prompt doubt concerning its general validity.

A major conceptual stumbling block in social anthropology and cultural anthropology is the idea that evolution refers to laws between the variables (Chaney 1971, 1972, 1973b, 1974a,b, 1975, 1976; Chaney and Ruiz Revilla 1969; see also Spiro 1965, 1966 and Chaney 1966a,b concerning typology and patterning). The numerical taxonomy of polythetic classification employs the Q-technique of statistical analysis—intercorrelating and clustering cases in terms of number of shared traits. Basically, Murdock's *Social Structure* employs the R-technique—intercorrelating traits in terms of cases (ethnic units). A Q-technique has recently been applied to cultural anthropological materials by Driver and Coffin (1975).⁴ Historically, the idea of "culture area" has been polydimensional in an impressionistic sense (see Driver 1961, 1962, 1966, 1970; Driver and Massey 1957; Chaney 1974a). I submit that it is potentially an evolutionary concept, but has not been perceived as such because of the tendency to equate scientific inquiry with the discovery of laws between the variables. The idea of "culture area" should be represented (a condition, not a commandment) as a transient local distortion in a space-time frame. Needham should instead be examining the life-long work of Murdock on a classification of world cultures (1957, 1967, 1968; Murdock and White 1969). An idea of taxon or "species" is reflected in Murdock's enunciation of "culture cluster," "culture province," "diffusion patches," etc. My point here is not that Murdock's is the classification we should be working with, but that Needham has failed to differentiate between the R-technique and the Q-technique.

Seemingly, Needham understands the evolution of living systems in terms of regular transformations in phenotypic characteristics. He states (p. 360), "I have suggested indeed that prescriptive systems tend to change in regular ways

⁴ They offer a statistical analysis of both tribe-by-tribe (Q-type) and trait-by-trait (R-type) comparisons of 392 culture traits among 245 tribes. A tree diagram yields intertribal and intertrait classifications at nearly as many levels as there are units being classified. With regard to intertribal correlations, Driver and Coffin state (p. 13), "After scanning this eight-page tree diagram and digesting its meaning, intuitive classifications at a single level, or even at three levels as in Kroeber (1939), seem highly oversimplified and comparable to the first steps of a toddling infant." As to general conclusions (p. 3), "Perhaps the most important finding is that most of the intertrait correlations cannot be explained or interpreted in functional or causal terms, but rather must be attributed to unknown causes, events, accidents, and the agents of history" (see also Driver et al. 1972).

(Needham 1967:46) and it seems quite feasible to establish regular transformations which bear a resemblance to evolving modifications in natural species." I wish to stress that theoretical biology has *not* postulated an unvarying order in the unfolding of living systems. The Darwinian insight was to explicate both the continuity of species *and* their change in terms of the twofold process of variation and selective retention. The idea of the double-stranded helix has been postulated as a universal "mechanism" to allow for an understanding of the process of living systems as a matter of course. Recently, Dobzhansky (1972:215) has stressed the importance of the emergence of the idea of "population": "The emergence of genetics has shifted the attention of evolutionists to the transmission of genes from one generation to the next. Selection occurs when the carriers of some gene variants leave more or fewer surviving descendants relative to the carriers of other variants. Or to put it differently, natural selection is differential perpetuation of genetic variants from generation to generation."

The argument here is in agreement with Needham's (1975:364) point of "the essential disparity between natural phenomena and collective representations." My contention, however, is that both natural phenomena and collective representations are fluxional. Our task as theoretical anthropologists is precisely to see how the fluid dynamics of collective representations differ from the dynamics of living systems.⁵ The data of social anthropology consist for the most part of a spatial distribution. In order to view the dynamics, we need to complement our data with the temporal data of world scientific inquiry, philosophy, and other sources. A fundamental question is Collingwoodian (1940:73): "On what occasions, and by what processes is one set of fundamental concepts, or constellations of absolute presumption, displaced by another?"

Toulmin (1972) has attempted to answer some objections to the application of the idea of evolution outside biology. He has employed the concepts "populations of people" and "populations of concepts" in his evolutionary view of human consciousness (pp. 337–38):

A clear-headed application of this "populational" model, however, demands precautions. In moving, from field to field, we should take care to avoid Mach's fallacy, and remember that the only feature common to all populational changes is, precisely, the general form of this dual process of variation and selection. And we should notice, also, that the twin subprocesses of variation and selection can be related in either of two different ways. They may take place quite independently, so that the factors responsible for the selective perpetuation of variants are entirely unrelated to those responsible for the original generation of those same variants. Or, alternatively, they may involve related sets of factors, so that the novel variants entering the relevant pool are already pre-selected for characteristics bearing directly on the requirements for selective perpetuation. To mark this difference, we may say in the latter case variation and selection are 'coupled,' in the former case 'decoupled.'

Potentially, human beings are active agents in selection, not merely *ex post facto*, but in the very elaboration of potential collective representations.⁶ The overall representation of

⁵ See Wiener (1949) for a discussion of the "Metaphysical Club" of James, Peirce, Dewey, Holmes, and others which met during the latter part of the 19th century in Cambridge, Massachusetts, essentially to discuss the idea of *evolutionism* as a generalization invading every field of study. According to Wiener (p. 26), "That the meaning of a theory *evolves* with its experimental applications, that all claims to truth have to be publicly verifiable and withstand the competition of prevailing ideas, and that the function of ideas is to adjust man to a precarious and changing world—these are essential aspects of the evolutionary meaning of the method of pragmatism."

⁶ Says Cassirer (1960:216–17), "It is perfectly true that the individual human being cannot, as such, transmit to others his own proficiencies, proficiencies which he has acquired through the course of his life. They adhere to the physical "soma" and are not transmitted. Nevertheless, that part of himself which he puts into his work, what is expressed linguistically in imagery in plastic form, is

Needham rivets the reader's attention, as do all human propositions, on a specific form of articulation among conceptual elements. I want to focus attention on a disparate form of articulation.

Needham identifies "evolution" with genetic classification. On this point, it is relevant to look at language classification. Greenberg (1963) has underscored three major methods: the genetic, the typological, and the areal. "Of these the genetic is the only one which is at once non-arbitrary, exhaustive and unique" (p. 66). "Thus, on the one hand, culture area, diffusion, and linguistic areal classification correspond and, on the other, *Kulturkreis*, migration, and linguistic genetic classification" (p. 73). Although a dendroid representation serves for biological evolution, it is not the analogon for representing human emotive meanings, which are fluxional and differentially transient. Human beings are able to search actively for their own transformation and transmutation of what is in need of understanding by examining the record of what other human beings have said and done at various space-time coordinates. I submit that a fundamental human characteristic is the potentiality for changing fundamentally (i.e., as to what one becomes emotional over) within one's own lifetime. I suggest that this is a basic revelation of Needham's own life, since he prefaces his *Belief, Language, and Experience* (1972) with T. S. Eliot's "So here I am, in the middle way, having had twenty years/Twenty years largely wasted. . . ." The frame of polythetic classification and regular transformations of formal properties screens the potential irregular metamorphosis of both individual and communal life.⁷

In order to represent our disciplines of understanding, I have recently employed a fluid concept (taxon) of the transient *meta-aggregate*: a people not necessarily living at the same time or in the same district, city, etc., or under the same kind of local laws, but rather linked by kinds of intentions (Chaney 1973, 1974a, b).

CONSEQUENCES

It is not merely polythetic classification, but rather polythematic expansion, which gestures at Evans-Pritchard's aphorism "There is only one method in social anthropology, the comparative method—and that's impossible" (cf. Needham 1975:365). My position is that the comparative method is impossible within the framework of merely comparing the comparable. The task is to expand representationally to embrace the other plots of life in terms of what the plots are leading to for the participants.

Needham ends his essay (p. 365) with a spirited plea for "relational concepts such as 'symmetry,' 'alternation,' 'transitivity,' 'complementarity,' etc., or . . . analysis by reference to logical possibilities." These would indeed make for an interesting conceptual probe, but the information that results must be related both to the system of phenomena and to the probe itself. Symbolic logic has been found to be a dead end in the history and philosophy of scientific inquiry. Anthropological searches for "primary factors of experience" must address the asymmetry in the space-time frame as to what have been treated as "basic predicates." Rather than searching for the

embodied in language and art and endures henceforth through it. It is this process which distinguishes the mere *transformation* [*Umbildung*] taking place in the sphere of organic emergence from the *formation* [*Bildung*] of humanity. The former is a passive occurrence, the latter is active. Accordingly, the former leads simply to variations, whereas the latter leads to enduring creations."

⁷ For contemporary reflections on symmetry and asymmetry in "comparative epistemology," see Wilson (1970), Horton and Finnegan (1973), Emmet and MacIntyre (1970), and Chaney (1973a). From my point of view, the truly profound fluxion of humanity has been not merely the accumulation of "words and things" (and their relationships), but an emerging awareness of the language communities in which one finds oneself.

basic predicates in terms of universal formal properties, we should treat disparate basic predicates as so many conclusions in search of a premise. The multitude of local distortions in the space-time-mode-meaning-significance frame exposes potentially creative imaginations diversely interlocked in humanly created values. *Imagination* is the premise and basic predicate. The very nature of human endeavor expresses an enormous potential diversity of semiautonomous and conflicting notions, trends, and aspirations. What is in need of understanding is not merely a morality (artificial local distortion in the semantic manifold), but rather the synergetic flow of human feelings as a result of the shape of a given morality (cf. Bateson 1958; Turner 1967; Geertz 1973, 1975; Diamond 1974). For Durkheim and Mauss (1967:86), "it is this emotional value of notions which plays the preponderant part in the manner in which ideas are connected or separated. It is the dominant characteristic in classification."

The capstone of Needham's construction is the seeming accord with Campbell's philosophical conclusion on family-resemblance predicates. Needham states (pp. 365-66),

Where we wish to make generalizations in the confidence that they admit no exceptions, he [Campbell] writes, defined terms are to be preferred, other things being equal, to family resemblance terms: "We should not rest on text until family resemblance predicates have been banished from our sciences" (Campbell 1965:244). This is exactly the aim of my "Remarks," to which this essay forms a sequel, though I do not think that such (polythetic) predicates can ever be eliminated from practical description in the field or from academic discourse about ethnographic reports. Where they can deliberately be dispensed with is in the contrivance of a formal theoretical terminology.

Unfortunately, the antinomy between Campbell and Wittgenstein is not resolved by merely quoting Campbell.⁸ In general, the antinomy refers to the fact that a useful term cannot apply to everything. However, Needham's contrivance reminds one of Hanson's (1969:25) caution:

It is often thought that the command "Define!" denotes but one sort of operation, as do commands like "Inhale!" or "Differentiate!" Our mission here is to raise some doubts about this.

Why? Why dynamite butterflies? Does anything go wrong conceptually if we think that defining is carried out in but one way rather than in many ways? The answer is "yes"—or at least a "perhaps."

The problem is not to construct a rigid formalism which admits of no exceptions, but to coordinate disparate families of inference structures with the phenomena so that they can admit of exceptions, irregularities, and anomalies. It is precisely when observation and theory are irreconcilable that one spends time just determining what it is that is in need of understanding. Needham's search for basic predicates and universals is a variation on the question "Why exceptions?" My wonderment continues to be about the diversely transient pockets of disparate regularities (and irregularities) in space-time: Why asymmetry in the overall flux density of human endeavors and meta-endeavors?

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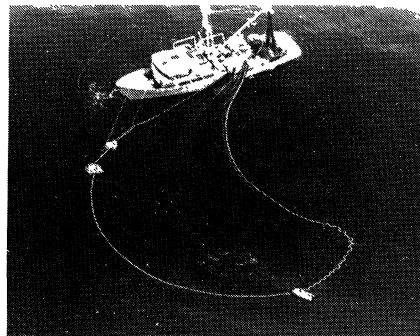
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